



## **Modeling Quarterly Review Meeting**

July 22, 2014

CBPO Conference Room - The Fishshack  
410 Severn Avenue Annapolis, MD 21403

### **For Remote Access:**

**Adobe Connect:** <https://epa.connectsolutions.com/modeling/> (enter as guest)

**Conference Bridge:** (866)-299-3188 code 410-267-5731#

**Event webpage:** <http://www.chesapeakebay.net/calendar/event/21418/>

**10:00 Announcements and Amendments to the Agenda – Dave Montali, WVDEP-  
Lee Currey, MDE**

**10:05 Review of Modeling Workgroup Priorities – Lee Currey, MDE - Dave  
Montali, WVDEP**

The quarterly review of the Modeling Workgroup priorities with associated timelines will be discussed.

**10:15 Phase 6 Watershed Model Schedule – Gary Shenk, U.S. EPA-CBP**

Gary will present an updated development schedule with key links to the 2017 Midpoint Assessment schedule. The document will be forwarded to the WQGIT and will detail what is needed and when for the Phase 6 modeling effort to move forward. The document will also cover the key objectives of 1) establishing Phase 6 targets, 2) developing scenario sensitivities, and 3) Phase 6 calibration procedures.

**10:40 Phase 6 Prototype – Gopal Bhatt, Penn State**

A prototype of the Phase 6 Watershed Model based on the HSPF PQUAL simulation and with an updated precipitation input dataset, hydrology, and sediment simulations will be presented.

**11:45 Literature Surveys of Urban and Agricultural Loads - TBD**

Tetra Tech has completed a literature survey for urban loads and is working on one for agriculture and these will be used as part of the procedure to establish Phase 6 load targets. Tetra Tech will give an updates on the progress of the loading targets work.

**12:00 LUNCH**

**1:00 Phase 6 Model Structure – Gary Shenk, U.S. EPA-CBP**

A review of the Phase 6 model structure as it relates to the simulation of phosphorus will be presented.

**1:15 Phosphorus Modeling and Legacies in the Bay Watershed – Pete Kleinman,  
USDA/ARS**

Information will be presented on phosphorus simulation approaches that can be used to update the Phase 6 agriculture simulation. This is a continuation of Pete's

presentation from April 1 and will focus on the findings from the Mahantango watershed in the coastal plain of the Lower Eastern Shore.

**1:35 STAC review of CBP Watershed Model P Processes – Ken Staver, UMd College of Agriculture**

The findings from an upcoming STAC review of phosphorus simulation will be discussed.

**2:05 APLE implementation in the CB watershed – Alisha Mulkey, Umd-ENST**

A description of the APLE model and it's calculation of loads in the Chesapeake watershed will be provided.

**2:35 Spatial Estimates of P Transport in the Chesapeake Watershed Using Sparrow – Scott Ator, USGS**

The spatial patterns and causes of phosphorus fate and transport differences will be discussed.

**3:00 Application of SPARROW for Target Load Specification – Ross Mandel, ICPRB**

An application of SPARROW output will be explored to potentially decrease the degree of Watershed Model regional factor application.

**3:20 ADJOURN**



## **Modeling Quarterly Review Meeting**

July 23, 2014

CBPO Conference Room - The Fishshack  
410 Severn Avenue Annapolis, MD 21403

### **For Remote Access:**

**Adobe Connect:** <https://epa.connectsolutions.com/modeling/> (enter as guest)

**Conference Bridge:** (866)-299-3188 code 410-267-5731#

**Event webpage:** <http://www.chesapeakebay.net/calendar/event/21418/>

### **10:00 Announcements and Amendments to the Agenda – Montali-Currey**

#### **10:05 Calculation of Oyster Benefits with a Bioenergetics Model of the Virginia Oyster – Carl Cerco, U.S. CoE ERDC**

Carl will present a bioenergetics model that is formulated and validated for the Virginia oyster (*Crassostrea virginica*). The model considers two basic properties of a bivalve population: number of individuals and individual size. Individuals are represented as three energy stores: soft tissue, shell, and reproductive material. The bioenergetics model is coupled to an oyster benefits module. Calculated benefits include various aspects of carbon removal, **nitrogen** removal, phosphorus removal, solids removal, and shell production. Benefits are calculated for natural mortality and for fisheries harvest. The bioenergetics model is coupled with a representation of the physical environment based on the tidal prism approach and with eutrophication kinetics from the CE-QUAL-ICM model.

#### **10:35 Extension of the WQSTM WQ Simulation to 2011 – Carl Cerco, U.S. CoE ERDC**

To support the shallow water multiple model simulations of the Chester River Carl will present plans to extend the water quality simulation to 2011 by the close of July.

#### **11:05 Multiple Model Assessment of Shallow Water Systems – Jeremy Testa, UMCES**

Jeremy will present an overview of the work they're doing in the shallow water model application and analysis of a coupled hydrodynamic- biogeochemical model using ROMS and RCA in the shallow water habitats of the Chester River.

#### **11:30 Multiple Model Assessment of Shallow Water Systems – Richard Tian UMCES**

Richard Tian will present an overview of the shallow water analysis using FVCOM and ICM in the shallow waters of the Chester River.

### **12:00 LUNCH**

**1:00 A Proposal For Climate Change, Sea Level Rise, and Marsh Loss – Carl Cerco, U.S. CoE ERDC**

Marsh erosion can impact water quality in two fashions. The first is the effect on light attenuation and biogeochemistry associated with eroded materials released to the water column. The second, often overlooked, effect is the loss of marsh function. Beneficial functions include retention and burial of suspended solids, nutrient uptake and sequestration, and nitrogen removal through denitrification. Loss of these functions has the potential to affect water quality standards.

**1:20 A Proposal for Extending the Wet Deposition of Nitrogen estimates to 2013 – Jeff Grimm, Penn State**

The proposed work plan is for the extension and refinement of the ammonium and nitrate atmospheric wet deposition models from the original 1984 to 2005 time-span currently used by the CBP (Grimm and Lynch, 2005; Grimm, 2007) to an extended period of 1983 to 2013. This will update the load source of what is among the highest Chesapeake nitrogen inputs and bring it up to the current period.

**1:40 James Chlorophyll – Arthur Butt, VADEQ**

The status of the James River chlorophyll analysis will be reviewed.

**2:00 ADJOURN**